

CLAIMS

What is claimed is:

1. A method of identifying an individual predisposed to early rejection of a kidney allograft, comprising determining a genotype of an IL-1 family member gene, wherein the presence of one or more alleles selected from the group consisting of:

- (a) an A1,A2 allele combination at an IL1A VNTR intron 6 locus;
- (b) an A2 allele at an IL-1A +4845 locus; and
- (c) an E2 allele at an IL-1B +3953 locus

indicates that the individual is at increased risk for early rejection of the kidney allograft.

2. The method of claim 1, wherein the genotype is determined by amplifying nucleic acid from the IL-1 family member gene.

3. The method of claim 2, wherein the nucleic acid is amplified using a primer selected from the group consisting of any of SEQ ID NOs. 1 through 6.

4. A primer set for use in determining a genotype in an IL-1 family member gene, selected from the group consisting of:

- (a) SEQ ID NO:1 and SEQ ID NO:2;
- (b) SEQ ID NO:3 and SEQ ID NO:4;
- (c) SEQ ID NO:5 and SEQ ID NO:6;

and combinations thereof.

5. A kit for use in determining a genotype in an IL-1 family member gene, comprising the primer set of claim 4.

6. A kit for use in determining a genotype in an IL-1 family member gene, comprising a primer selected from the group consisting of any of SEQ ID NOs. 1 through 6.

7. The method of any one of claims 1 through 3, wherein the genotype is determined using a technique selected from the group consisting of:

- a) allele specific oligonucleotide hybridization;
- b) size analysis;
- c) sequencing;

- d) hybridization;
- e) 5' nuclease digestion;
- f) single-stranded conformation polymorphism;
- g) allele specific hybridization;
- h) primer specific extension; and
- j) oligonucleotide ligation assay.

8. A method for treating a patient predisposed to early kidney allograft rejection, said method comprising:

- (a) determining a genotype in an IL-1 family member gene, wherein the presence of one or more alleles, selected from the group consisting of an A1,A2 allele combination at an IL1A intron 6 VNTR locus; an A2 allele at the IL-1A +4845 locus; and an E2 allele at the IL-1B +3953 locus, indicates that the individual is at increased risk for early rejection of the kidney allograft; and
- (b) altering adjusting immunosuppressive therapy in the patient.

9. A method for treating a patient not predisposed to early kidney allograft rejection, said method comprising:

- (a) determining a genotype in an IL-1 family member gene, wherein the absence of one or more alleles, selected from the group consisting of an A1,A2 allele at an IL1A VNTR locus; an A2 allele at the IL-1A +4845 locus; and an E2 allele at the IL-1B3953 locus, indicates that the individual is not predisposed to early rejection of the kidney allograft; and
- (b) alter or adjust immunosuppressive therapy in the patient.

10. A process for using the kit of any one of claims 5 and 6 to determine whether an individual is predisposed to early kidney allograft rejection.